CLAIMS

What is claimed is:

1. A strut for a geometric modeling, the strut comprising:

a shaft section having a first end and a second end;

a first node connector element;

a second node connector element;

a first flexible section coupling said first node connector element and said first end; and

a second flexible section coupling said second node connector element and said second end.

2. A strut according to claim 1 wherein said shaft comprises a rigid element.

3. A strut according to claim 1 wherein said first node connector element comprises a planar element having an aperture therein and comprising a pin element positionable therethrough and in normal relation to said planar element.

4. A strut according to claim 1 wherein said shaft comprises a tubular element.

5. A strut according to claim 1 wherein said first node connector element comprises a first planar element having a first aperture, said second node connector element comprises a second planar element comprising a second aperture therein and comprising a pin element positionable therethrough and in normal relation to said planar element.

6. A strut according to claim 1 wherein said strut includes a first end-tab comprising a first planar element having a first aperture therein, a second planar element as said flexible section, and an insertion section for coupling to said shaft.

7. A strut according to claim 6 wherein said shaft is tubular and said insertion section is adapted to couple to said shaft by insertion therein.

8. A strut according to claim 7 wherein said shaft may be modified in length by cutting thereof while maintaining an ability to receive said insertion section therein.

9. A strut according to claim 1 wherein said first flexible section provides flexibility in at least one of compression, contraction, and stretching.

10. A strut according to claim 1, wherein said first node connector element comprises a planar element having an aperture therein, in combination with a node pin adapted for engaging said aperture to pin a second planar node connector element in stacked parallel relation and in rotatable relation to said node pin.

11. A geometric skeletal modeling system comprising:

a plurality of coupling elements; and

a plurality of struts, each strut including a shaft section, a first planar end, a second planar end, a first flexible section coupling a first end of said shaft and said first planar end, and a second flexible section coupling a second end of said shaft and said second planar end, said coupling elements being adapted to couple selected planar ends of different struts in face-to-face relation.

12. A system according to claim 11 wherein said coupling elements comprise pins and said selected planar ends include apertures therethrough.

13. A system according to claim 12 wherein a selected one of said pins inserts in normal relation to said selected planar ends and maintain said selected planar ends in face-to-face relation while allowing rotation thereof about an axis of said selected one of said pins.

14. A system according to claim 11 wherein each of said struts comprise a tubular shaft, a first end-tab as said first planar end and said first flexible section, and a second end-tab as said second planar end and said flexible section.

15. A system according to claim 14 wherein each of said end-tabs comprise a coupling element for attachment to said tubular shaft.

16. A system according to claim 15 wherein said attachment is by insertion into said tubular shaft.

17. A system according to claim 16 wherein said tubular shaft may be cut to selected length while preserving an ability to receive said end-tabs.

18. A system according to claim 11 wherein system includes a plurality of apertures, each first planar element and each second planar element include at least one of said apertures therethrough and wherein said coupling elements comprise node pins adapted for engaging selected ones of said apertures and securing in stacked relation corresponding selected ones of said planar elements.

19. A system according to claim 18 wherein said node pins comprise axially extendable elements having a first outer diameter when in a rest state and a lesser second outer diameter in an axially stretched state, said first outer diameter being greater than a diameter of said apertures, said second outer diameter being less than said diameter of said apertures.

20. A system according to claim 19 wherein each of said node pins include first and second holding walls in face-to-face relation and capturing therebetween said corresponding selected ones of said planar elements.

21. A system according to claim 18 wherein said node pins comprise laterally compressible elements having a first outer diameter when in a rest state and a lesser second outer diameter in an axially stretched state, said first outer diameter being greater than a diameter of said apertures, said second outer diameter being less than said diameter of said apertures.

22. A system according to claim 21 wherein said node pins include a central valley section capturing therein said corresponding selected ones of said planar elements.

23. A system according to claim 21 wherein said node pins are adapted in dimension relative to said diameter of said aperture whereby at least two of said node pins can occupy one of said apertures.

24. A method of constructing a geometric model comprising the steps:

coupling together a first strut and a second strut with a node pin by placing said pin in normal relation to a first planar face of said first strut and a first planar face of said second strut;

coupling a third strut to said first and second struts by placing said pin in normal relation to a first planar face of said third strut;

urging at least one of said first, second, and third struts into non-planar relation relative to the other two of said first, second, and third struts by flexing a length section of at least one of said first, second, and third struts, said length section being less than a full length of said at least one of said first, second, and third struts.

25. A method according to claim 24 wherein said urging step comprises flexing each of said first, second, and third struts.

26. A method according to claim 24 wherein a plurality of struts, including said first, second, and third struts, are coupled to form a three dimensional model with each strut

having at each end thereof a planar face, selected planar faces of selected struts being coupled by selected pins placed therethrough to form selected nodes.

27. A method according to claim 26 wherein a plurality of struts are coupled together form a first geometric structure, each of said plurality of struts including a central length section, a first and second planar face, and a first and second flexible length section, the first flexible length section being interposed between a first end of said central length section and said first planar face, the second flexible length section being interposed between said second planar face and a second end of said central length section.

28. A method according to claim 27 wherein a second geometric structure couples to said first geometric structure, said second geometric structure being formed from a second plurality of struts similar in structure to said first plurality of struts, said first and second geometric structures being coupled by stacking and securing in parallel relation selected planar faces of said first geometric structure with selected planar faces of said second geometric structure.